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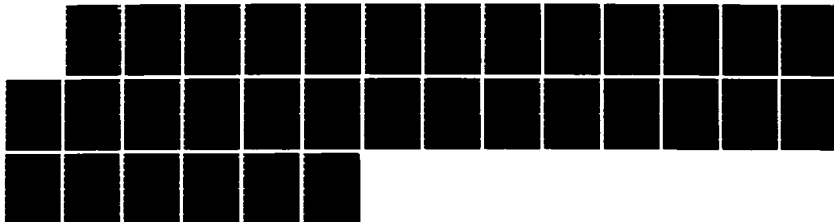
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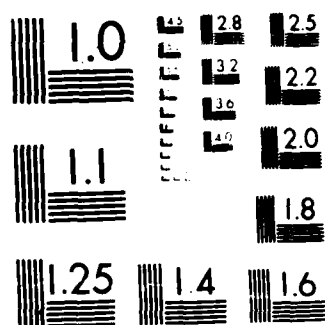
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Soviet ground and tactical air forces, long numerically superior to Western ground and tactical air forces deployed on or along the Eurasian landmass, also enjoy profound geographical advantages, especially vis a vis NATO forces deployed in Europe. The quality of Soviet ground force weapons and equipment is moreover second to none anywhere in the world, and though Soviet tactical aircraft remain on balance technologically inferior to NATO's, the Soviets have managed to narrow the qualitative gap substantially during the past two decades. Against these advantages, however, must be counted a number of unquantifiable disadvantages: the comparatively greater strategic demands imposed upon Soviet ground and the U.S.S.R.'s extensive borders; the incompatibility of the Soviet military's professed operational doctrine and the Soviet Union's authoritarian political culture; the inferior quality and training of Soviet military manpower; and declining Soviet competitiveness in many advanced military technologies such as "stealth" - and SDI-related technologies. (over)

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Abstract (cont.)

Between now and the year 2000 it is unlikely that the Soviet ground and tactical air forces would be prepared to give up their longstanding numerical and geographical advantages. On the other hand, if the West were to allocate more resources to exploiting its inherently greater technological competitiveness (an effort that would require, among other things, a reduction in present levels of licit and illicit advanced technology transfer to the Eastern Bloc), it could compel the Soviet Union to choose between ground and tactical air forces that are (1) numerically superior but no longer qualitatively competitive, or (2) qualitatively competitive but no longer endowed with an operationally significant numerical advantage.



1. Description of the problem	
2. Statement of the objectives	
3. Description of the methodology	
4. Results and conclusions	
5. Special	

A-11

Soviet Ground and Tactical Air Forces

by Jeffrey Record

When discussing the Soviet military before American defense audiences, it is customary to dwell on Soviet strengths while ignoring or downplaying Soviet weaknesses. There are at least two reasons for this. First, Soviet military strengths lie mainly in the quantifiable indices of military power, and are therefore susceptible to comparatively precise measurement. Second, to focus on the Soviet military's weaknesses without addressing its strengths undercuts support for a strong U.S. defense and opens one's analysis to the charge of deliberate selectivity.

Recent books like Andrew Cockburn's The Threat: Inside the Soviet Military Machine and Tom Gervasi's The Myth of Soviet Military Supremacy are, to be sure, refreshing counters to the Pentagon's constant refrain that the Soviet military is ten feet tall. Yet Cockburn does a disservice both to the Soviet military and to the canons of objective analysis by suggesting that the Soviets, even when sober, are militarily incompetent. History does not support this conclusion; and, as others have pointed out, Russian insobriety on European battlefields of the past two centuries afforded little comfort either to Napoleon or to Hitler. As for Gervasi's assessment of the Soviet military, it amounts to little more than an evident a priori determination to "prove" that the Soviets pose no real threat to the West's security.

If, however, the Soviets-are-but-military-midgets school of analysis does little to get at the truth about Soviet military power, neither does the-Russians-are-coming-the-Russians-are-coming school, which confines its analysis mainly to those things military that can be counted, in which the Soviet Union enjoys a clear advantage over the United States if not the West as a whole. This school also has a tendency to downplay or dismiss altogether the critical role allies play in U.S. force planning and strategy. For example, in the first edition (1981) of the Defense Department's glossy brochure on Soviet Military Power, the East-West force comparisons included non-Soviet Warsaw Pact forces but excluded non-U.S. NATO forces. In so doing, they completely ignored what is perhaps the greatest remaining strategic advantage the United States has over the Soviet Union: namely, the adhesion of rich, militarily powerful, and politically reliable allies, in contrast to Moscow's relatively few, poor, militarily weak, and politically untrustworthy auxiliaries.

In assessing Soviet military power--and my topic here is Soviet ground and tactical air forces--I start from two basic premises. The first is that the Soviet military, like any other military, or for that matter any other human organization, has both challenging strengths and exploitable weaknesses. The Soviet military is neither Hulk Hogan nor Woody Allen. It is by any standards a formidable military

entity, and it is the only military force in the world capable of destroying both the American military and the United States itself. But it is by no means undefeatable.

My second premise is that numbers of things military-- troops, tanks, maneuver battalions, planes, warships, missiles, etc., while a proper starting point in any calculation of the military balance, and while sometimes decisive in war (especially in protracted conflicts), constitute only one dimension of military power. It is essential to count the countable. It is no less essential, however, to recognize that the countable is but one index of military power, and that it is more often than not a quite unreliable predictor of combat outcomes. History bulges with victories achieved by outnumbered forces, as it does with defeats sustained by numerically superior forces. Except in situations in which one side or the other enjoys a crushing numerical advantage, battles and campaigns have been determined more by how one uses what one has than by how much one has. As important if not more so than numbers are such unquantifiable things as strategy, doctrine, tactics, leadership, quality of weaponry, small unit cohesion, morale, and the like. Let us not forget the lessons of Vietnam, or the fact that we blundered into disaster there in part on the advice of a Secretary of Defense who regarded the precisely calculable as the only meaningful index of military power.

In terms of numbers, Soviet ground and tactical air forces are unquestionably impressive. The Soviet army, the most powerful in the world, contains a total of 2,000,000 men and 200 divisions of varying readiness (the U.S. Army has 18 divisions plus ten in reserve status). It is also the most completely mechanized army in the world; almost all of its divisions are armored or mechanized infantry, and even the Soviet army's seven airborne divisions contain enough tracked and other vehicles to move them mechanically on the ground. If tactical mobility is an indispensable ingredient of modern combat, the Soviet army has it in spades (six of the U.S. Army's 18 divisions still depend primarily on marching for their tactical mobility).

Moreover, the quality of Soviet ground force weapons and equipment is second to none, and where deficient, is more than offset by numbers. The Soviets may continue to lag behind the West in other technologies, but they have effectively eliminated any significant disadvantages in ground warfare technologies. They have moreover done so without giving up their longstanding numerical superiority.

One of the most important features of recent Soviet ground force modernization is that it has been achieved without a major sacrifice in the Soviet army's size. In the West, technological advances in weaponry are fast becoming affordable only at the expense of enervating reductions in force

structure. However, the Soviets have, at least so far, avoided permitting modernization from becoming the enemy of mass. The Soviets continue to field advanced ground and air weapons in desirable numbers in part because of a willingness to devote a much higher percentage of their gross national product to defense than does the United States, and in part because of a weapons design and procurement process that recognizes that the best is often the enemy of the good. The numbers speak for themselves: 53,000 main battle tanks; 59,000 armored fighting vehicles; 29,000 artillery tubes; 21,000 anti-aircraft guns; 4,300 mobile, crew-served surface-to-air missiles systems; and hundreds of thousands of anti-tank weapons of all types.

Major Soviet ground weapons are comparable in quality to NATO's first-line counterparts. And whatever relative disadvantages the Soviet army has in one category of weapons or another is more than compensated by technological advantage in other categories and, of course, by superior numbers. The Soviets had the best tank of World War II, and in their present T-80 have a tank that does not suffer in comparison to the U.S. M-1 ABRAMS. The Soviets deployed a true infantry fighting vehicle (the renowned BMP) some two decades ago, and are now fielding a much improved successor. The United States is still in the process of fielding its first IFV (the BRADLEY), a trouble prone vehicle of questionable survivability in combat. And NATO's oft-touted numerical and qualitative superiority in

anti-tank systems vanishes if tanks themselves are counted as potent tank-killers (as indeed they are) and if one takes into consideration the fact that a higher percentage of Soviet anti-tank systems than NATO's are mounted on vehicles.

In short, in the arena of ground combat, traditionally Russia's strongest military suit, the United States and its key allies do not enjoy anything remotely approaching the margin of technological advantage necessary to offset the Soviet army's numerical preponderance in a variety of important potential war scenarios. This absence of compensatory qualitative advantage automatically inflates the operational value of the Soviet advantage in numbers. Indeed, if at some point quantity takes on a quality of its own, that point may be found on the Soviet side in the East-West force balance on the ground.

Soviet tactical air forces, while less impressive in relation to the West's, nevertheless pose a formidable threat to NATO's air power, especially in conjunction with Soviet ground force superiority over NATO in organic air defenses. The Soviet tactical air forces (including the Air Defense Command) field a total of about 6,500 combat aircraft, a number roughly comparable to the total number deployed by the U.S. Air Force, Navy, and Marine Corps alone. If the combat aircraft of the two superpowers' respective European allies are added to the count, the NATO-Warsaw Pact air balance becomes, at least in terms of numbers of planes, markedly unfavorable to the

Pact. It is moreover widely conceded that first-line Soviet tactical aircraft, such as the MiG-25 FOXBAT, MiG-29 FULCRUM, SU-24 FENCER, and SU-25 FROGFOOT, are by appreciable margins qualitatively inferior to such first-line U.S. aircraft as the F-14, F-15, F-16, and A-10. The Soviets also suffer a distinct technological inferiority in advanced air-to-air and air-to-ground munitions and submunitions, although the cost of such munitions has prohibited the United States and its NATO allies from acquiring them in desired numbers.

What is noteworthy about Soviet tactical air power is its remarkable transformation during the past two decades. Until the latter half of the 1960s Soviet tactical air forces consisted mainly of short-range interceptors dedicated to protecting Warsaw Pact air space and ground forces; Soviet tactical air forces were not in a position to challenge NATO's air forces over NATO territory, and therefore could not provide proper aerial support for a Warsaw Pact invasion of Western Europe. During the last twenty years, however, the Soviet Union has developed truly balanced tactical air capabilities by fielding a host of large, high-payload, multi-purpose aircraft which, if not as technologically advanced as their Western counterparts, are capable of striking targets deep in NATO territory and of gaining at least local air superiority outside Warsaw Pact air space. The Soviets now have large numbers of high-performance aircraft which, given the presumption of the

Warsaw Pact as the attacker, argues strongly for the conclusion that should war take place in Europe, the contest for control of the skies will be waged largely over NATO rather than Warsaw Pact territory.

This conclusion is reinforced by the combination of NATO's continuing lack of adequate ground-based air defenses and the density of such defenses both in Eastern Europe and inside the Soviet army itself. A single Soviet motorized rifle (mechanized infantry) division carries with it into battle no fewer than 133 gun and missile anti-aircraft weapons; and in the European theater as a whole the Warsaw Pact enjoys a 6.83:1 numerical advantage over NATO in crew-served surface-to-air missile launchers. The Soviet ZSU-23-4 Shilka division air defense system, first introduced in 1965, remains superior to any U.S. Army counterpart, and certainly to the disastrous and recently cancelled DIVADS.

The East-West air picture, at least in Europe, becomes even less encouraging for NATO when one takes into consideration NATO's continued concentration of its tactical air power on a relative small number of large air bases vulnerable to Soviet air, surface-to-surface missile, and SPETSNAZ attacks (in contrast to the far larger number and more widely dispersed air bases from which Soviet and Warsaw Pact air power operates in Eastern Europe and the U.S.S.R.'s western military districts). There is, too, NATO's failure as yet to field an effective, theater-wide Identification Friend or Foe system.

The transformation of Soviet tactical air power from a defensive to an offensive force and the growth of Soviet air defenses since the latter 1960s threaten to deprive NATO of a traditional advantage long regarded as an indispensable means of offsetting the Soviet army's numerical preponderance on the ground.

To the above strengths of Soviet ground and tactical air forces must be added the Soviet Union's enormous geographic advantage with respect to conflict on or along most of the Eurasian land mass, especially in Europe. The Soviet Union enjoys the advantages of central position in Eurasia. It thus can move its forces from one place to another on that land mass more quickly than can adversaries compelled to operate along external lines of communication (the major exception being Soviet transfers to and from the Far East, which is linked to the Russian heartland solely by the vulnerable trans-Siberian railroad). The Soviet Union's geographic advantages with respect to a conflict in Europe are particularly worrisome. The Soviet Union is directly adjacent to Europe and enjoys short land lines of communication to NATO Center, whereas the United States, NATO's principal source of wartime reinforcement, is separated from the Continent by 3,000 miles of water and suffers an inexcusable paucity of the shipping needed to carry reinforcements to Europe.

Even more disturbing is NATO Europe's lack of depth, which makes it a particularly attractive candidate for the very kind of surprise blitzkrieg emphasized in Soviet operational doctrine. It is but 100-200 miles from the inter-German border to the Rhine, and but 250-400 miles from that border to the Channel and North Sea ports. Moreover, the North German Plain, while far from optimal tank country, boasts a dense network of superb, all weather roads and highways that can accomodate Soviet armored fighting vehicles in wartime as it has NATO's in peacetime. Unlike the Soviet Union in World War II, NATO has provided little space to offer an attacker in exchange for time, especially an attacker that fully understands the opportunities and limitations of blitzkrieg as practiced during and since that war. [Though the German blitzkriegs of 1939-1942 could not accomodate the vast expanses of often roadless terrain in the Soviet Union, they achieved stunning successes without exception against small and comparatively shallow European countries having extensive networks of modern roads.]

The actual peacetime geographic distribution of Soviet ground and tactical air forces reflects the Soviet Union's longstanding Eurocentric military orientation. Fully one-half of the Soviet army's 200 divisions are deployed in Eastern Europe and the western military districts of the U.S.S.R., with the balance split about equally between the Far East on the one

hand, and the Moscow, Ural, Volga, North Caucasus, Trans-Caucasus, and Turkestan military districts on the other. Soviet tactical air forces are similarly deployed, although a higher proportion is withheld in central Russia as a strategic reserve. The creme de la creme of the Soviet army is the 20-division Group of Soviet Forces Germany (GSFG). The GSFG is maintained in the highest state of readiness and is almost invariably the first element of the Soviet army to receive the newest weapons and equipment. The Soviet army's 11 divisions deployed elsewhere in Eastern Europe (Poland, Hungary, and Czechoslovakia) also are maintained in a Category 1 state of readiness, as is a relatively high percentage of those divisions withheld in the U.S.S.R.'s western military districts.

Neither the Soviet military buildup in the Far East during the past twenty years nor mounting Soviet investment in intercontinental force projection capabilities should be misinterpreted as a declining military interest in Europe. Expansion in non-Eurocentric Soviet military capabilities has not come at the expense of forces allocated for possible conflict in Europe, where both the Soviet Union and the West continue to deploy the bulk of their respective military power.

So far, we have discussed the principal strengths of Soviet ground and tactical air forces, which reside primarily in the dimensions of numbers and geographical advantage. Let us now turn to their weaknesses, which lie mainly in the immeasurable

indices of military power and are therefore susceptible only to cautionary analysis. The first weakness is strategic: the Soviet Union faces military problems more difficult and greater in number than does the United States. Unlike the United States, which faces no hostile or threatening neighbors along its borders (there is no Group of Soviet Forces Mexico hovering across the Rio Grande), the Soviet Union is surrounded by antagonistic states and peoples (China, Afganistan, Iran, Turkey) or troublesome and untrustworthy "allies" (Poland, Czechoslovakia, Hungary, Romania); there is more than a grain of truth to the old saw that the Soviet Union is the only country in the world encircled by hostile communist states.

The huge size of Soviet ground and tactical air forces derives in part from a longstanding fear of having to wage war on more than one front along its borders, and it is important to remember that Soviet ground and tactical air combat forces have been directly employed since 1945 only against other communist states. Fear of upheaval within her own anachronistic military empire and of hostile China's massive military potential confronts Soviet military planners with problems that have no parallels in Western military planning. These fears also serve substantially to restrict the amount of its military power the Soviet Union could employ against the West in the event of war. It is little wonder that those members of the Joint Chiefs of Staff that have been asked the

question, of whether they would trade U.S. military forces and problems for Soviet military forces and problems, have without exception responded firmly in the negative.

A second weaknesses lies in the application of declared Soviet operational doctrine. Soviet operational doctrine is remarkable for its incorporation of the lessons of the Soviet Union's and others' combat experience and for its acute appreciation of the West's military strengths and weaknesses (as well as how to exploit the latter). But is it not self-evident that the Soviets could effectively apply their doctrine. Soviet doctrine emphasizes a no-notice invasion of Europe characterized by rapid, unstinting (24-hours-a-day), opportunistic offensive operations aimed at depriving the enemy of the initiative throughout the conflict. The aim is to keep the defender continually off balance by confronting him with a series of rapidly unfolding and unexpected actions faster than he can effectively react to them. This doctrine, however, like the older German doctrine of blitzkrieg upon which the Russians have drawn so heavily, requires a pervasive decentralization of command authority and a high tolerance of combat uncertainties. Local commanders on the spot, governed only by broad, mission-type orders (which in essence tell a subordinate what to do but not how to do it), must be given the latitude to make critical decisions on their own since they are best able to assess the dangers, risks, and opportunities afforded by

their immediate combat environment and can translate their judgment into action faster than commanders compelled to receive permission from higher authority. [What is really noteworthy about the downing of the KAL-007 airliner is how long it took the Soviet Air Defence Command to do it.]

This internal contradiction between the decentralization of command authority required by the objective character of modern warfare and the centralization of command authority required by the subjective necessity to preserve the legitimacy of higher authority has served, notwithstanding proclaimed operational doctrine, to reinforce allegiance to Russia's historic style of warfare: a heavy reliance on numbers as compensation for a persistent inability to adapt rapidly and effectively to unexpected events on the battlefield. Indeed with some notable exceptions, operational rigidity has been the hallmark of the Soviet military performance in combat since the invasion of Finland in 1940. A ponderous methodicalness has been no less characteristic of the performance of most Third World militaries that are supplied, trained, and advised by the Soviet Union. In the Arab-Israeli wars of 1956, 1967, and 1973, Soviet-model client armies, though well-armed, exhibited fatal organizational and doctrinal rigidities in the face of far more flexible and innovative Israeli forces. And even in the Israeli-Syrian conflict in Lebanon, the Syrian air force, equipped entirely by 1982 the Soviets and governed by Soviet

tactical air doctrine (which apparently emphasizes, among other things, close management of distant air battles from bunkered command and control sites on the ground), was almost effortlessly slaughtered by the Israeli air force.

This is not to argue that debilitating inflexibility would inevitably characterize Soviet command and control in a future conflict. Soviet ground and tactical air forces have not been called upon to wage a major conventional war since 1945, thus denying U.S. and allied force planners any determinative referent experience. The present conflict in Afghanistan, in which Soviet military modernity is being pitted against an elusive, primitive foe under highly unfavorable local political conditions, is of dubious instructiveness, although available information does suggest pervasive "micromanagement" of Soviet tactical operations from above and slow adaptation to the peculiar natural and tactical conditions facing Soviet ground forces in that remote country.

To put it another way, there is no evidence that the Soviet military has resolved the contradiction between its traditional structure of command authority and the demands of its professed operational doctrine. If this is in fact the case, if the Soviet military, by virtue of its own traditional style of warfare and the singular political and ideological culture from which it is drawn, remains governed by a rigid and excessively centralized system of command authority, then the early

disruption of that system in the event of war offers an indirect and potentially decisive means of dislocating Soviet operational plans and cohesion from the outset of hostilities. Indeed, the exceptional redundancy of, and protection afforded to, Soviet command, control, and communications could well be testimony to an overly centralized command system recognized by the Soviets themselves as a potential Achilles Heel. The significance accorded by the Soviets to survivable command and control is no less evident in the heavy emphasis Soviet doctrine places on the early destruction of NATO's command and control.

To the extent that Soviet operational cohesion is unusually dependent upon an uninterrupted flow of orders and instructions from an unusually centralized chain of command authority, that chain should be a prime target of U.S. and allied force planning, even at the expense of resources currently dedicated to the destruction of Soviet combat forces. Paralyzing Soviet ground and tactical air operations by going for the Soviet military's brain and central nervous system may be less costly than hacking away at its muscles, although it is not likely to be easier, given the redundancy of Soviet command, control, and communications. Decapitation has little to recommend it at the strategic level, but could prove decisive at the operational.

A third weakness of Soviet ground and tactical air forces relates to the quality of manpower serving in them, especially

at the rank-and-file level. Both rely heavily on short-service conscripts which, in comparison to NATO soldiers and airmen, are poorly paid, ill-trained, and unfamiliar with many of the every-day technologies routinely encountered in the West (e.g., most Soviet conscripts enter military service not knowing even how to drive a car), to say nothing possessing the background skills required to master advanced military technologies. Soviet ground and tactical air forces have relatively little modern combat experience, and those who man those forces receive on balance substantially less training than do their counterparts in the West. Soviet pilots, for example, generally receive roughly one-half the number of flying hours considered by most NATO air forces necessary to retain adequate proficiency for combat.

Any assessment of Soviet military manpower quality also must take into consideration serious racial, ethnic, linguistic, and religious divisions within the enlisted ranks and between a largely Slavic officer corps and an increasingly non-Slavic rank and file. These divisions, which are likely to widen as the Slavic portion of the Soviet Union's population continues its relative decline, raise serious questions about the Soviet army's reliability under conditions of sustained combat against Moslem, Asian, and other non Western countries. To be sure, there is no reason to doubt the loyalty and tenacity of Soviet ground and tactical air forces in any

conflict involving the defense of the Soviet homeland against a foreign invader. Such confidence, however, might be misplaced in circumstances in which the Soviet military itself was called upon to invade and conquer foreign territory.

A fourth weakness is technological. Though, as noted, the Soviet army overall registers no significant technological inferiorities vis a vis Western ground forces, and certainly none that are not more than offset by the Soviet army's superiority in numbers, the same cannot be said of Soviet tactical air forces. The Soviets have substantially reduced, but are still a long way from overcoming, their once marked qualitative inferiority in the air. They moreover appear to be lagging well behind at least the United States in such emerging and potentially revolutionary technologies as "stealth" and the many anticipated by-products of ongoing SDI research and development. If the lopsided Israeli victory over the Syrian air force in 1982 was attributable in part to the unmatched quality of Israeli pilots, it was no less testimony to the technological inferiority of the Syrian air force's Soviet MiGs.

Only the U.S. Air Force's budgetary interest is served by overestimating the quality of Soviet combat aircraft. For example, the MiG 25, at one time described by a Secretary of the Air Force as the finest interceptor of the world, was discovered upon examination (courtesy of Lieutenant Viktor I.

Balenko's defection in the plane to Japan in 1976) to have troublesome engine, a radius of action one-third that estimated, and a speed 40 percent lower than estimated.

This discussion of Soviet ground and tactical air force weaknesses is by no means exhaustive. Nor should it be construed as a conclusion that Soviet weaknesses are or are not offset by Soviet strengths. Like the Soviet Union, the United States and its key allies have their own military weaknesses on the ground and in the air. And it is the threat implicit in the combination of Western weakness and Soviet strengths that ought to command--and does--primacy of attention on the part of Western force planners.

Nowhere is that combination more disturbing than in Europe, the principal focus of both Soviet and U.S. force planners. Soviet force and geographic advantages join with persistent and profound NATO force postural and intra-Alliance political disadvantages to support the Supreme Allied Commander Europe's judgment that within a matter of hours or days, and not weeks, of a Soviet invasion of Europe he would probably be compelled to request authority to use nuclear weapons.

NATO's force postural deficiencies lie primarily on the ground and in the air, and include, among other things, an absence of barrier defenses along the inter-German border; lack of sufficient operational reserves to contain a major breakthrough; dangerously low war reserve stocks of ammunition, especially "smart" munitions; maldeployment; lack of

standardized weapons, equipment, and operating procedures; and, as noted, tactical air forces which, because of their concentration on a relatively small number of air bases, are exceedingly vulnerable to a devastating surprise attack launched by Soviet tactical air forces, theater ballistic missiles, and special operations forces. Recent Soviet deployment of the SS-21, SS-22, and SS-23 missiles, against which there is no present or programmed defense, pose perhaps the single greatest threat to NATO's ability to gain and maintain air superiority in the event of war. Both NATO ground and tactical air forces also lack all but the most rudimentary protection against the kind of massive chemical attack the Soviet army is capable of delivering.

Against an adversary that has organized its own ground and tactical air forces and tailored its operational doctrine for a high-intensity short war designed to achieve a conclusive victory before NATO could mobilize its ultimately greater wartime economic potential and concentrate its comparatively more dispersed and less ready forces (a short war is further imperative for the Soviet Union because a protracted conflict could impose unbearable strains on Soviet morale and the continued adhesion of Warsaw Pact allies)--against such an adversary, NATO's force postural deficiencies constitute a standing invitation to Soviet attack in a crisis and to catastrophe once hostilities begin.

The picture becomes even more discouraging in the light of the steady and seemingly irreversible decay during the past two decades of political cohesion within the Atlantic Alliance, a decay manifest in the rise of powerful political opposition parties in key NATO countries, notably the Labour Party in Britain and the SPD in Germany, that do not regard the Soviet Union as a military threat to Western Europe's security and that seek major, unilateral reductions in national defense expenditure as well as complete elimination of NATO's theater nuclear deterrent. Trans-Atlantic political relations on matters of defense and of defense burden-sharing has deteriorated in recent years in part because of the coming to political maturity of new European generation that regards the past forty years of unprecedented peace on the Continent as a natural and more or less permanent condition.

The potential consequences of eroding political cohesion within NATO in time of crisis or war should not be underestimated. Take, for example, the old issue of warning time before a Soviet attack, an issue that for the most part is still treated in terms of how soon NATO could detect unambiguous Soviet preparations for an attack. The real issue has never been how many days or weeks of warning NATO would have of an impending attack, but rather whether the Alliance could or would respond collectively and effectively to even the clearest and most advanced warning. It is quite conceivable

that NATO, as an alliance of truly sovereign states, would fail the test, which is essentially one of political will and courage. In an acute crisis, some NATO members will wish to undertake preparatory measures such as calling up reserves and dispersing deployed nuclear weapons from their vulnerable storage sites; others, however, are likely to resist such actions on the ground that they will provoke the very war they are designed to deter. And, in the event of war, it is not inconceivable that most European members of NATO will oppose resort to nuclear fire under any circumstances, and that Germany and other "frontline" NATO states, if on the verge of being overrun or their armies destroyed, would opt for a separate peace with the Soviet Union. In the absence of the necessary political cohesion, even a complete elimination of all of NATO's present force postural deficiencies would count for little in the end.

As for the course of Soviet ground and tactical air forces between now and the year 2000, much depends on the stability and continuity of Soviet political leadership and on the broad political-military choices that leadership believes it has available to it. It is highly unlikely that Mr. Gorbachev or any other Russian leader would be prepared to give up or trade

away the Soviet military's longstanding quantitative superiority in the European theater, a superiority that, as noted, is significantly reinforced by immutable geographic advantages. For the indefinite future, U.S. and NATO ground forces immediately available for Europe's defense will continue to be substantially outnumbered; there is virtually no prospect of NATO conventional force expansion sufficient to overcome its quantitative inferiority on the ground. NATO ground forces also will continue to be politically denied potential doctrinal and force postural innovations that could partially compensate for NATO's geographic disadvantages; the Federal Republic of Germany will continue to veto proposals to erect effective barrier defenses along the inter-German border (for fear of encouraging Germany permanent political division), and to resist any changes in NATO's present and comparatively rigid doctrine of forward defense that might suggest a willingness either to trade (at least German) territory for time or to mount even local NATO counterattacks on the ground across the inter-German border. NATO war planning will remain a reflection of the lowest common political denominator within the Alliance.

Nor is it realistic to expect that the Soviet military will

cease doing everything it can to eliminate its remaining qualitative disadvantages vis a vis the West. It has already done so in most ground warfare technologies and is working hard to overcome its qualitative inferiority in other categories of military power, including tactical air power.

It is not at all self-evident, however, that the Soviet Union will succeed in doing so. According to the Joint Chiefs of Staff, in their United States Military Posture FY 1988, the United States continues to enjoy superiority in 14 of the 20 most important basic technology areas. And there is reason to believe that by the year 2000 Soviet tactical air forces could find themselves even further behind the West in relevant state-of-the-art technologies than they are today; even the possibility that Soviet ground forces might find themselves significantly behind the technology curve cannot be entirely dismissed.

Former presidential National Security Advisor Zbigniew Brezezinski has correctly observed that "Moscow's only claim to the status of a world power is its military might," and that "while the United States is plunging headlong into the technetronic age, the Soviet Union is still struggling desperately to make its relatively conventional industrial economy more efficient and modern." The Soviet Union's rigid command economy is highly antagonistic to sustained and self-

generating technological innovation; and to the extent that the Soviet military has managed to narrow the gap with the West in technologies suitable for military purposes, it has done so largely by importing, copying, and stealing them from the West. In the case of such emerging exotic technologies as those associated with the U.S. Strategic Defense Initiative and the Advance Technology Bomber and Advanced Technology Fighter programs, the present Soviet lag behind the United States is likely to widen rather than close. Indeed, it can be argued that the Soviets' strident and uncompromising opposition to the SDI stems less from concern over its arguable counter-threat to a Soviet first nuclear strike against the United States than it does from fear of its possible long-term implications for the East-West conventional military balance. Many of the technologies now being explored under the SDI's rubric have clear and potentially revolutionary applications in the arena of conventional ground and air combat --applications that conceivably could place Soviet ground and tactical air forces at an indefinite if not permanent disadvantage. For this reason alone the United States should accept no negotiated constraints on continued SDI research and development or upon SDI technologies' potential conventional force application; and it ought to go without saying that under no circumstances should the United States even offer, as has President Reagan on

more than one occasion, to share SDI technologies with the Soviet Union.

For the Soviet military, preservation--to say nothing of expansion--of qualitative gains already made on the West is compounded not only by the Soviet economy's declining performance but also by what appears to be a new Soviet political leadership committed to reviving that economy even at the price of reductions in the pace of real defense investment. The Kremlin's present leadership, which is relatively young (by Soviet standards) and could remain in power well beyond the year 2000, seems far more concerned than its geriatric predecessors over the long-term strategic implications for the Soviet Union of its stagnant and increasingly troubled economy. There is mounting evidence that Mr. Gorbachev sees a more efficient, productive, and innovative economy as the prerequisite to enduring and effective military competition with the West; and that he sees a relative disinvestment in defense, at least in the near term, as the only means of obtaining the necessary capital to restore productivity to the civilian sector of the economy. This conclusion is supported by the new Kremlin's increasingly manifest desire to liquidate the war in Afghanistan and to obtain via negotiation a major reduction in both U. S. and Soviet strategic armaments.

None of this is to suggest that a significant contraction in Soviet military power is in the offing; rather, it is to argue that the days of relatively easy resource allocation choices, especially choices between the civilian and military sectors, are over for the Kremlin. Indeed, the Soviet military may be entering an era in which they can no longer hope to eliminate the West's technological superiority while at the same time preserving its traditional margin of numerical advantage. The choice may increasingly be one of quality versus quantity--a Hobson's choice for a military that historically has regarded numbers as the only sure guarantee of success in battle.

The United States and its Western allies ought to make this choice as difficult as possible for Moscow. To do so, however, will demand, among other things, a halt to Western transfers of technology to the Soviet Union as well as a U.S. ability to field state-of-the-art weapons in something more than token numbers. It does little good to maintain or expand a technological lead over the Soviet military if that lead is visible mainly on drawing boards, in laboratories, and at test ranges. Pursuit of technology for its own sake can and has led to unconscionable delays in the introduction of advanced weapons as well as to advanced weapons too costly to be procured in remotely desirable numbers. It also has led to unnecessarily

complex weapons whose actual field performance belies advertised performance. It makes little difference whether the Advanced Technology Fighter proves to be twice or three times better than its future Soviet competitor if we can afford to field only a couple of squadrons of them. At some point numbers do count, and count decisively. We cannot continue to allow the best to become the enemy of the good. Nor can we continue to tolerate a defense acquisition process that rewards delay, unnecessary complexity, and excessive cost in the development and deployment of technologically superior weaponry. Fulfillment of the Packard Commission's recommendations is an imperative first step in the kind of defense acquisition reform needed.

A no less imperative measure to increase the costs to the Soviet Union of qualitative military competition with the West is cessation of direct and indirect technological and other subsidies to Moscow. This means a total ban on the deliberate or inadvertant transfer of military applicable technology to the Soviet Union. The machinery for tighter regulation of technology transfer to the Warsaw Pact already exists in the form of the Coordinating Committee; what is need is greater political resolve to make it work. It also means a halt to such things as American grain sales to the Soviet Union, which by subsidizing the weakest sector of the Soviet economy, permit

internal reallocations of scarce resources into Moscow's military machine. The pecuniary interest of the Kansas wheat farmer is not necessarily identical to, and certainly not superior to, the security interests of the nation as a whole.

The United States and its key allies are in a position to influence if not dictate future Soviet ground and tactical air force choices in a direction favorable to the West. We are in a position not only substantially to raise the price of Moscow's bid to overcome Western technological advantages, but also to exploit, more so than we have to date, longstanding weaknesses in Soviet ground and tactical air forces such as strategic overcommitment, excessive centralization of command authority, and inferior manpower quality. What is required is the political will and courage to force the Soviets to choose between ground and tactical air forces that are either numerically superior but no longer qualitatively competitive or qualitatively competitive but no longer endowed with an operationally significant numerical advantage.

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